

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A power transmission fluid composition comprising:

(a) a base oil and

(b) an additive composition comprising

(i) a borated dispersant, wherein the borated dispersant includes up to 1 wt% of boron;

(ii) a non-metallic succinimide friction modifier prepared from an alkenyl succinic acid or anhydride and ammonia;

(iii) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof,

wherein the fluid is free of any other non-metallic friction modifier other than the succinimide friction modifier.

2. (ORIGINAL) The fluid of claim 1, wherein the base oil comprises a natural lubricating oil, a mixture of natural lubricating oils, a synthetic oil, a mixture of synthetic oils, or a mixture of natural and synthetic oils.

3. (ORIGINAL) The fluid of claim 2, wherein the natural lubricating oil or mixture of natural lubricating oils comprises a mineral oil, a vegetable oil, or a mixture thereof.

4. (ORIGINAL) The fluid of claim 2, wherein the synthetic oil or mixture of synthetic oils comprises an oligomer of an alphaolefin, an ester, an oil derived from a Fischer-Tropsch process, a gas-to-liquid stock, or a mixture thereof.

5. (ORIGINAL) The fluid of claim 1, wherein the base oil comprises a kinematic viscosity of from about 2 cSt to about 10 cSt at 100 °C.

6. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant is free of phosphorus.

7. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises about 0.1 wt% to about 0.7 wt% of boron.

8. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises about 0.25 wt% to about 0.7 wt% of boron.

9. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises one or more of a succinimide, a Mannich base, and polyalkylene amine.

10. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprise one or more of a bis-succinimide.

11. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises the reaction product of a polyalkenyl succinic anhydride and a polyalkylene polyamine.

12. (PREVIOUSLY AMENDED) The fluid of claim 11, wherein the polyalkylene polyamine comprises a tetraethylene pentamine.

13. (PREVIOUSLY AMENDED) The fluid of claim 11, wherein the molar ratio of polyalkenyl succinic anhydride to polyalkylene polyamine is about 1:1 to about 2.4:1.

14. (PREVIOUSLY AMENDED) The fluid of claim 13, wherein the molar ratio of polyalkenyl succinic anhydride to polyalkylene polyamine is about 2.4 to about 1.

15. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises the reaction product of a polyalkenyl phenol, an aldehyde, and a polyalkylene polyamine.

16. (PREVIOUSLY AMENDED) The fluid of claim 15, wherein the polyalkenyl phenol comprises a long chain hydrocarbon-substituted phenol and the aldehyde comprises formaldehyde and wherein the reaction product is formed by condensing about one molar proportion of the long chain hydrocarbon-substituted phenol with from about 1 to about 2.5 moles of formaldehyde and from about 0.5 to about 2 moles of polyalkylene polyamine.

17. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant has at least one polyalkylene moiety having a molecular weight of from about 900 amu to about 3000 amu.

18. (PREVIOUSLY AMENDED) The fluid of claim 17, wherein the at least one polyalkylene moiety has a molecular weight of from about 1300 amu to about 2100 amu.

19. (PREVIOUSLY AMENDED) The fluid of claim 18, wherein the at least one polyalkylene moiety has a molecular weight of about 2100 amu.

20. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant has at least two polyalkylene moieties, wherein each polyalkylene moiety has a molecular weight of from about 900 amu to about 3000 amu.

21. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant is reacted with an organic acid, an anhydride, and/or an aldehyde/phenol mixture.

22. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises about 1 wt% to about 5 wt% of the borated dispersant.

23. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises about 1.25 wt% to about 2.5 wt% of the borated dispersant.

24. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises about 50 to about 250 ppm by weight of boron.

25. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the borated dispersant comprises a mixture of borated dispersants.

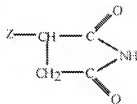
26. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the succinimide comprises the reaction product of a succinic anhydride and ammonia.

27. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the succinimide comprises an alkenyl group having about 12 to about 36 carbon atoms.

28. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the succinimide comprises an alkenyl group having about 16 to about 28 carbon atoms.

29. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the succinimide comprises an alkenyl group having about 18 to about 24 carbon atoms.

30. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the succinimide comprises one or more of a compound having the following structure:



wherein Z has the structure:



wherein either R₁ or R₂ may be hydrogen, but not both, and wherein R₁ and/or R₂ may be independently straight or branched chain hydrocarbon groups containing from about 1 to about 34 carbon atoms such that the total number of carbon atoms in R₁ and R₂ is from about 11 to about 35; and

wherein, in addition to or in the alternative, the parent succinic anhydride may be formed by reacting maleic acid, anhydride, or ester with an internal olefin containing about 12 to about 36 carbon atoms, said internal olefin being formed by isomerizing the olefinic double bond of a linear [alpha]-olefin or mixture thereof to obtain a mixture of internal olefins.

31. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises a friction-modifying amount of the succinimide.

32. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises about 0.2 wt% to about 1.0 wt% of the succinimide.

33. (PREVIOUSLY AMENDED) The fluid of claim 32, wherein the fluid comprises about 0.2 wt% to about 0.6 wt% of the succinimide.

34. (PREVIOUSLY AMENDED) The fluid of claim 33, wherein the fluid comprises about 0.4 wt% of the succinimide.

35. (CANCELED).

36. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the phosphorus-containing antiwear component comprises an ester of phosphoric acid, an ester of phosphorous acid, or an amine salt thereof.

37. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the phosphorus-containing antiwear component comprises one or more of a dihydrocarbyl phosphite, a trihydrocarbyl phosphite, a dihydrocarbyl phosphate, a trihydrocarbyl phosphate, any sulfur analogs thereof, and any amine salts thereof.

38. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the phosphorus-containing antiwear component comprises one or more of a dibutyl hydrogen phosphite and an amine salt of a sulfurized dibutyl hydrogen phosphate.

39. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises from about 50 to about 500 parts per million by weight of phosphorus.

40. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises from about 150 to about 300 parts per million by weight of phosphorus.

41. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid comprises about 0.1 wt % to about 0.4 wt % of the phosphorus-containing antiwear component.

42. (PREVIOUSLY AMENDED) The fluid of claim 41, wherein the fluid comprises about 0.2 wt % to about 0.3 wt % of the phosphorus-containing antiwear component.

43. (PREVIOUSLY AMENDED) The fluid of claim 1, further comprising one or more of an antioxidant, an extreme pressure additive, a corrosion inhibitor, an antiwear additive, a metal deactivator, an antifoam agent, a viscosity index improver, a pour point depressant, an air entrainment additive, a metallic detergent, and a seal swell agent.

44. (PREVIOUSLY AMENDED) The fluid of claim 1, wherein the fluid is suitable for use in a transmission employing one or more of a slipping torque converter, a lock-up torque converter, a starting clutch and one or more shifting clutches.

45. (PREVIOUSLY AMENDED) The fluid of claim 44, wherein the fluid is suitable for use in a belt, chain, or disk-type continuously variable transmission.

46. (CURRENTLY AMENDED) A method of improving friction durability comprising:
adding to a base oil an additive composition comprising

(a) a borated dispersant having at least one polyalkylene moiety having a molecular weight from about 900 to about 3000 amu, wherein the borated dispersant includes up to 1 wt % of boron;

(b) a friction-modifying amount of a non-metallic succinimide friction modifier, wherein the succinimide is prepared from an alkenyl succinic acid or anhydride and ammonia;

(c) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof,

wherein the additive composition is free of any other non-metallic friction modifier other than the succinimide friction modifier.

47. (PREVIOUSLY PRESENTED) A power transmission fluid composition comprising:

(a) a base oil and

(b) an additive composition comprising

(i) a borated dispersant, wherein the borated dispersant includes up to 1 wt% of boron, and wherein the borated dispersant comprises the reaction product of a polyalkenyl phenol, an aldehyde, and a polyalkylene polyamine;

(ii) a succinimide prepared from an alkenyl succinic acid or anhydride and ammonia;

(iii) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof.

48. (PREVIOUSLY PRESENTED) A power transmission fluid composition comprising:

(a) a base oil and

(b) an additive composition comprising

(i) a borated dispersant, wherein the borated dispersant includes up to 1 wt% of boron, and wherein the borated dispersant is reacted with an organic acid, an anhydride, and/or an aldehyde/phenol mixture;

(ii) a succinimide prepared from an alkenyl succinic acid or anhydride and ammonia;

(iii) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof.

49. (CURRENTLY AMENDED) A power transmission fluid composition comprising:

(a) a base oil and

(b) an additive composition comprising

(i) a borated dispersant, wherein the borated dispersant includes up to 1 wt% of boron;

(ii) a non-metallic succinimide friction modifier prepared from an alkenyl succinic acid or anhydride and ammonia;

(iii) a phosphorus-containing antiwear component comprising one or more of a dibutyl hydrogen phosphite and an amine salt of a sulfurized dibutyl hydrogen phosphate,

wherein the additive composition is free of any other non-metallic friction modifier other than the succinimide friction modifier.

50. (PREVIOUSLY PRESENTED) A method of improving friction durability comprising:

adding to a base oil an additive composition comprising

(a) a borated dispersant having at least one polyalkylene moiety having a molecular weight from about 900 to about 3000 amu, wherein the borated dispersant includes up to 1 wt % of boron, and wherein the borated dispersant comprises the reaction product of a polyalkenyl phenol, an aldehyde, and a polyalkylene polyamine;

(b) a friction-modifying amount of a succinimide, wherein the succinimide is prepared from an alkenyl succinic acid or anhydride and ammonia;

(c) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof.

51. (PREVIOUSLY PRESENTED) A method of improving friction durability comprising:

adding to a base oil an additive composition comprising

(a) a borated dispersant having at least one polyalkylene moiety having a molecular weight from about 900 to about 3000 amu, wherein the borated dispersant includes up to 1 wt % of boron, and wherein the borated dispersant is reacted with an organic acid, an anhydride, and/or an aldehyde/phenol mixture;

(b) a friction-modifying amount of a succinimide, wherein the succinimide is prepared from an alkenyl succinic acid or anhydride and ammonia;

(c) a phosphorus-containing antiwear component comprising an organic ester of phosphoric acid, phosphorous acid, or an amine salt thereof.

52. (CURRENTLY AMENDED) A method of improving friction durability comprising:

adding to a base oil an additive composition comprising

(a) a borated dispersant having at least one polyalkylene moiety having a molecular weight from about 900 to about 3000 amu, wherein the borated dispersant includes up to 1 wt % of boron;

(b) a friction-modifying amount of a non-metallic succinimide friction modifier, wherein the succinimide is prepared from an alkenyl succinic acid or anhydride and ammonia;

(c) a phosphorus-containing antiwear component comprising one or more of a dibutyl hydrogen phosphite and an amine salt of a sulfurized dibutyl hydrogen phosphate,

wherein the additive composition is free of any other non-metallic friction modifier other than the succinimide friction modifier.